DEPARTMENT OF ENERGY

10 CFR Part 430

EERE–2020–BT–TP–0029

RIN 1904-AF03

Energy Conservation Program: Test Procedure for Portable Air Conditioners

AGENCY: Office of Energy Efficiency and Renewable Energy, Department of Energy.

ACTION: Request for information.

SUMMARY: The U.S. Department of Energy ("DOE") is undertaking the preliminary stages of a rulemaking to consider amendments to the test procedure for portable air conditioners ("ACs"). Through this request for information ("RFI"), DOE seeks data and information regarding issues pertinent to whether amended test procedures would more accurately or fully comply with the requirement that the test procedure produces results that measure energy use during a representative average use cycle or period of use for the product without being unduly burdensome to conduct, or reduce testing burden. DOE welcomes written comments from the public on any subject within the scope of this document (including topics not raised in this RFI), as well as the submission of data and other relevant information.

DATES: Written comments and information are requested and will be accepted on or before **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

ADDRESSES: Interested persons are encouraged to submit comments using the Federal eRulemaking Portal at *http://www.regulations.gov*. Follow the instructions for submitting comments. Alternatively, interested persons may submit comments, identified by docket number EERE-2020-BT-TP-0029, by any of the following methods:

1. *Federal eRulemaking Portal*: *http://www.regulations.gov*. Follow the instructions for submitting comments.
2. *E-mail*: to *PortableAC2020TP0029@ee.doe.gov*. Include docket number EERE-2020-BT-TP-0029 in the subject line of the message.

No telefacsimiles ("faxes") will be accepted. For detailed instructions on submitting comments and additional information on this process, see section III of this document.

Although DOE has routinely accepted public comment submissions through a variety of mechanisms, including postal mail and hand delivery/courier, the Department has found it necessary to make temporary modifications to the comment submission process in light of the ongoing Covid-19 pandemic. DOE is currently suspending receipt of public comments via postal mail and hand delivery/courier. If a commenter finds that this change poses an undue hardship, please contact Appliance Standards Program staff at (202) 586-1445 to discuss the need for alternative arrangements. Once the Covid-19 pandemic health emergency is resolved, DOE anticipates resuming all of its regular options for public comment submission, including postal mail and hand delivery/courier.

*Docket***:** The docket for this activity, which includes *Federal Register* notices, comments, and other supporting documents/materials, is available for review at *http://www.regulations.gov*. All documents in the docket are listed in the *http://www.regulations.gov* index. However, some documents listed in the index, such as

those containing information that is exempt from public disclosure, may not be publicly available.

The docket web page can be found at *http://www.regulations.gov/docket?D=EERE-2020-BT-TP-0029*. The docket web page contains instructions on how to access all documents, including public comments, in the docket. See section III for information on how to submit comments through *http://www.regulations.gov*.

FOR FURTHER INFORMATION CONTACT: Mr. Bryan Berringer, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Office, EE-5B, 1000 Independence Avenue, SW., Washington, DC, 20585-0121. Telephone: (202) 586-0371. E-mail: *ApplianceStandardsQuestions@ee.doe.gov*.

Ms. Sarah Butler, U.S. Department of Energy, Office of the General Counsel, GC-33, 1000 Independence Avenue, SW., Washington, DC, 20585-0121. Telephone: (202) 586-1777. E-mail: *Sarah.Butler@hq.doe.gov*.

For further information on how to submit a comment or review other public comments and the docket, contact the Appliance and Equipment Standards Program staff at (202) 287-1445 or by e-mail: *ApplianceStandardsQuestions@ee.doe.gov*.

SUPPLEMENTARY INFORMATION:

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I. Introduction

DOE's test procedures for portable ACs are prescribed in the Code of Federal Regulations ("CFR") at Title 10 of the CFR part 430, subpart B, appendix CC ("appendix CC"). The following sections discuss DOE's authority to establish and amend test procedures for portable ACs, as well as relevant background information regarding DOE's consideration of test procedures for this product.

A. Authority and Background

The Energy Policy and Conservation Act, as amended ("EPCA"),[1] authorizes DOE to regulate the energy efficiency of a number of consumer products and certain industrial equipment. (42 U.S.C. 6291–6317) Title III, Part B[2] of EPCA established the Energy Conservation Program for Consumer Products Other Than Automobiles, which

[1] All references to EPCA in this document refer to the statute as amended through the Energy Act of 2020, Public Law 116-260 (Dec. 27, 2020).
[2] For editorial reasons, upon codification in the U.S. Code, Part B was redesignated Part A.

sets forth a variety of provisions designed to improve energy efficiency. In addition to specifying a list of covered products, EPCA enables the Secretary of Energy to classify additional types of consumer products as covered products under EPCA. (42 U.S.C. 6292(a)(20)) In a final determination of coverage published in the *Federal Register* on April 18, 2016, DOE classified portable ACs as covered products under EPCA. 81 FR 22514.

The energy conservation program under EPCA consists essentially of four parts: (1) testing, (2) labeling, (3) Federal energy conservation standards, and (4) certification and enforcement procedures. Relevant provisions of EPCA specifically include definitions (42 U.S.C. 6291), test procedures (42 U.S.C. 6293), labeling provisions (42 U.S.C. 6294), energy conservation standards (42 U.S.C. 6295), and the authority to require information and reports from manufacturers (42 U.S.C. 6296).

Federal energy efficiency requirements for covered products established under EPCA generally supersede State laws and regulations concerning energy conservation testing, labeling, and standards. (42 U.S.C. 6297) DOE may, however, grant waivers of Federal preemption for particular State laws or regulations, in accordance with the procedures and other provisions of EPCA. (42 U.S.C. 6297(d))

The Federal testing requirements consist of test procedures that manufacturers of covered products must use as the basis for: (1) certifying to DOE that their products comply with the applicable energy conservation standards adopted pursuant to EPCA (42 U.S.C. 6295(s)), and (2) making representations about the efficiency of those consumer products (42 U.S.C. 6293(c)). Similarly, DOE must use these test procedures to

determine whether the products comply with relevant standards promulgated under EPCA. (42 U.S.C. 6295(s))

Under 42 U.S.C. 6293, EPCA sets forth the criteria and procedures DOE must follow when prescribing or amending test procedures for covered products. EPCA requires that any test procedures prescribed or amended under this section be reasonably designed to produce test results which measure energy efficiency, energy use or estimated annual operating cost of a covered product during a representative average use cycle or period of use and not be unduly burdensome to conduct. (42 U.S.C. 6293(b)(3))

EPCA also requires that, at least once every 7 years, DOE review test procedures for all type of covered products, including portable ACs, to determine whether amended test procedures would more accurately or fully comply with the requirements for the test procedures be reasonably designed to produce test results that reflect energy efficiency, energy use, and estimated operating costs during a representative average use cycle or period of use and to not be unduly burdensome to conduct. (42 U.S.C. 6293(b)(1)(A)) If the Secretary determines, on her own behalf or in response to a petition by any interested person, that a test procedure should be prescribed or amended, the Secretary shall promptly publish in the *Federal Register* proposed test procedures and afford interested persons an opportunity to present oral and written data, views, and arguments with respect to such procedures. The comment period on a proposed rule to amend a test procedure shall be at least 60 days and may not exceed 270 days. (42 U.S.C. 6293(b)(2)) In prescribing or amending a test procedure, the Secretary shall take into account such information as the Secretary determines relevant to such procedure, including technological developments relating to energy use or energy efficiency of the type (or class) of covered products involved. *Id.* If DOE determines that test procedure revisions

are not appropriate, DOE must publish its determination not to amend the test procedures. (42 U.S.C. 6293(b)(1)(A)) DOE is publishing this RFI to collect data and information to inform its decision in satisfaction of the 7-year review requirement specified in EPCA.

In addition, EPCA requires that DOE amend its test procedures for all covered products to integrate measures of standby mode and off mode energy consumption into the overall energy efficiency, energy consumption, or other energy descriptor, taking into consideration the most current versions of Standards 62301 and 62087 of the International Electrotechnical Commission ("IEC"),[3] unless the current test procedure already incorporates the standby mode and off mode energy consumption, or if such integration is technically infeasible. (42 U.S.C. 6295(gg)(2)(A)) If an integrated test procedure is technically infeasible, DOE must prescribe separate standby mode and off mode energy use test procedures for the covered product, if a separate test is technically feasible. (*Id*.)

B. Rulemaking History

On November 5, 2020, DOE published an early assessment review RFI in which it sought data and information pertinent to whether amended test procedures would (1) more accurately or fully comply with the requirement that the test procedure produces results that measure energy use during a representative average use cycle or period of use for the product without being unduly burdensome to conduct, or (2) reduce testing burden. 85 FR 70508 ("November 2020 RFI"). DOE received comments in response to the November 2020 RFI from the interested parties listed in Table I.1.

[3] IEC Standard 62301, "Household electrical appliances – Measurement of standby power"; IEC Standard 62087, "Methods of measurement for the power consumption of audio, video and related equipment"

Table I.1 Written Comments Received in Response to November 2020 RFI

Organization(s)	Reference in this RFI	Organization Type
Association of Home Appliance Manufacturers	AHAM	Trade Association
California Investor-Owned Utilities	California IOUs	Utility
Appliance Standards Awareness Project & Consumer Federation of America	Joint Commenters	Efficiency Organizations
Northwest Energy Efficiency Alliance	NEEA	Efficiency Organization

Based on DOE's review of the test procedure for portable ACs and the comments received, as discussed in the following sections, DOE has determined it is appropriate to continue the test procedure rulemaking after the early assessment process. *See* 10 CFR part 430 subpart C appendix A section 8(b).

II. Request for Information

In the following sections, DOE has identified a variety of issues on which it seeks input to determine whether, and if so how, an amended test procedure for portable ACs would (1) more accurately or fully comply with the requirements in EPCA that test procedures be reasonably designed to produce test results which reflect energy use during a representative average use cycle or period of use, without being unduly burdensome to conduct (42 U.S.C. 6293(b)(3)); or (2) reduce testing burden.

Additionally, DOE welcomes comments on any aspect of the existing test procedures for portable ACs that may not specifically be identified in this document.

A. Scope and Definitions

In a coverage determination published on April 18, 2016, DOE established the definition of a "portable air conditioner" as a portable encased assembly, other than a

packaged terminal air conditioner, room air conditioner, or dehumidifier, that delivers cooled, conditioned air to an enclosed space, and is powered by single-phase electric current. 81 FR 22514, 22519–22520; *see also* 10 CFR 430.2. The definition also states that a portable AC includes a source of refrigeration and may include additional means for air circulation and heating. *Id.*

In a final rule published on June 1, 2016, DOE established definitions for two portable AC configurations: "single-duct portable air conditioner" and "dual-duct portable air conditioner." 81 FR 35241, 35245–35246 ("June 2016 Final Rule"). A "single-duct portable air conditioner" is a portable AC that draws all of the condenser inlet air from the conditioned space without the means of a duct, and discharges the condenser outlet air outside the conditioned space through a single duct attached to an adjustable window bracket. 10 CFR 430.2. A "dual-duct portable air conditioner" is a portable AC that draws some or all of the condenser inlet air from outside the conditioned space through a duct attached to an adjustable window bracket, may draw additional condenser inlet air from the conditioned space, and discharges the condenser outlet air outside the conditioned space by means of a separate duct attached to an adjustable window bracket. *Id*.

Issue 1: DOE seeks comment on whether the current definitions of "portable air condition," "single-duct portable air conditioner," and "dual-duct portable air conditioner" require amendment, and if so, how the terms should be defined.

Issue 2: DOE requests comment on whether the existing equipment definitions specified in 10 CFR 430.2 for portable ACs require amendments to distinguish further between single-duct and dual-duct units, or to address any unique configurations that are not clearly addressed in the existing definitions. If

amendments are recommended, DOE seeks information on what identifying characteristics may be included in potential amended or new definitions.

B. Test Procedure

Portable ACs are tested in accordance with appendix CC, which incorporates by reference American National Standard Institute ("ANSI")/Association of Home Appliance Manufacturers ("AHAM") PAC-1-2015 "Portable Air Conditioners" ("ANSI/AHAM PAC-1-2015"), ANSI/American Society of Heating, Refrigerating and Air-Conditioning Engineers ("ASHRAE") Standard 37-2009 "Methods of Testing for Rating Electrically Driven Unitary Air-Conditioning and Heat Pump Equipment" ("ANSI/ASHRAE Standard 37-2009"), and IEC Standard 62301 "Household electrical appliances—Measurement of standby power" (Edition 2.0 2011-01) ("IEC Standard 62301"), with modifications. Regarding dual-duct portable ACs, the DOE test procedure specifies provisions in addition to ANSI/AHAM PAC-1-2015. Specifically, the DOE test procedure specifies an additional test condition for dual-duct portable ACs (83 degrees Fahrenheit ("°F") dry-bulb and 67.5 °F wet-bulb outdoor temperature) and additionally accounts for duct heat transfer, infiltration air heat transfer, and off-cycle mode energy use. *See* Sections 4.1; 4.1.1; 4.1.; and 4.2 of appendix CC. ANSI/AHAM PAC-1-2015 does not have similar provisions. Appendix CC also includes instructions regarding tested configurations, duct setup, inlet test conditions, condensate removal, unit placement, duct temperature measurements, and control settings. *See* Sections 3.1.1; 3.1.1.1; 3.1.1.2; 3.1.1.3; 3.1.1.4; 3.1.1.6; and 3.1.2 of appendix CC.

Under the current test procedure, a unit's seasonally adjusted cooling capacity ("SACC"), in British thermal units per hour ("Btu/h"), is calculated as a weighted average of the adjusted cooling capacity measured at two representative operating

conditions. The adjusted cooling capacity is the measured indoor room cooling capacity while operating in cooling mode under the specified test conditions, adjusted based on the measured and calculated duct and infiltration air heat transfer. *See* Sections 4.1; 4.1.1; 4.1.2; 5.1; and 5.2 of appendix CC. The combined energy efficiency ratio ("CEER") represents the efficiency of the unit, in Btu per watt-hours ("Btu/Wh"), based on the adjusted cooling capacity at the two operating conditions; the annual energy consumption in cooling mode, off-cycle mode, and inactive or off mode; and the number of cooling mode hours per year; with weighting factors applied for the two operating conditions. *See* Sections 4.2; 4.3; 5.3; and 5.4 of appendix CC.

1. Updates to Industry Standards

As discussed, appendix CC references ANSI/AHAM PAC-1-2015, an industry test procedure for portable ACs, with modifications. In the November 2020 RFI, DOE sought comment on the availability of industry-accepted consensus-based test procedures for measuring the energy use of portable ACs that could be adopted without modification and more accurately or fully comply with the requirement that the test procedure produces results that measure energy use during a representative average use cycle for the product, and not be unduly burdensome to conduct. 85 FR 70508, 70511.

AHAM stated its intent to revise ANSI/AHAM PAC-1-2015, incorporating the waivers that DOE had granted, or at the time was considering, under its existing test procedure.[4] AHAM urged DOE to adopt the updated ANSI/AHAM PAC-1 test procedure once finalized. AHAM further stated it will provide status updates to DOE as

[4] The existing portable AC test procedure waiver granted to LG Electronics USA, Inc. is available at *https://www.regulations.gov/docket/EERE-2018-BT-WAV-0007*. Since AHAM's comment, DOE has also granted an interim waiver to GD Midea Air Conditioning Equipment Co. LTD., available at *https://www.regulations.gov/docket/EERE-2020-BT-WAV-0023*. Test procedure waivers are discussed further in section II.C.

both the ANSI/AHAM PAC-1 revision and DOE test procedure assessment proceed, and welcomed DOE to participate in the ANSI/AHAM PAC-1 revision efforts. (AHAM, No. 2 at pp. 2−3)[5]

Issue 3: DOE requests input on any other industry standards relevant to portable ACs that should be considered in assessing amendments to the existing DOE test procedure for portable ACs.

2. Test Harmonization

The Joint Commenters encouraged DOE to align the portable AC and room AC test procedures to allow consumers to be able to compare the efficiency ratings of the two products, which they stated can often be used for the same applications. The Joint Commenters stated that the current test procedures do not provide a fair comparison between portable ACs and room ACs, asserting that the efficiency ratings of portable ACs are inflated relative to those of room ACs due to the differences in test conditions between the two procedures. The Joint Commenters stated that future harmonized load-based test procedures for portable ACs and room ACs based on performance at multiple outdoor conditions would better represent how all units perform in the field. (Joint Commenters, No. 4 at pp. 1−2)

NEEA similarly urged DOE to align the test procedures for portable ACs and room ACs to ensure comparability of efficiency and capacity ratings across both products. According to NEEA, room ACs and portable ACs are similar products that are both

[5] A notation in the form "AHAM, No. 2 at pp. 2–3" identifies a written comment: (1) made by the Association of Home Appliance Manufacturers; (2) recorded in document number 2 that is filed in the docket of this test procedure rulemaking (Docket No. EERE-2020-BT-TP-0029) and available for review at *http:// www.regulations.gov*; and (3) which appears on pages 2–3 of document number 2.

likely to be used as supplemental cooling sources either for consumers that do not have central cooling systems or when those centralized systems are not sufficient to meet the cooling needs of a specific space. (NEEA, No. 5 at p. 1) According to NEEA, differences between the two test procedures lead to incomparability between the two AC types and may potentially mislead consumers with higher ratings for portable ACs. NEEA recommended that both products be rated using a seasonal metric at the same test conditions, and that DOE adopt load-based test procedure for both products. NEEA stated that using a load-based test is the best way to fully account for the effectiveness of controls, cycling effects, and variable speed performance of both portable ACs and room ACs, and would better reflect real world performance. (NEEA, No. 5 at pp. 1−2)

The California IOUs encouraged DOE to align the portable AC, room AC, and central air conditioner/heat pump ("central AC/HP") test procedures to allow consumers to more readily compare performance across these categories. The California IOUs further claimed that room ACs and portable ACs provide largely the same consumer utility as central ACs/HPs of similar capacity, with the only significant differences being the method of installation and ease in relocation, respectively. (California IOUs, No. 3 at pp. 1, 3−4)

Both NEEA and the California IOUs, referenced DOE's statement in the June 2016 Final Rule in which DOE stated that comparative ratings between room ACs and portable ACs are desirable and that DOE would consider whether rating conditions representative of room AC usage should be adjusted when it conducts a rulemaking for its room AC test procedures. (NEEA, No. 5 at pp. 1−2; California IOUs, No. 3 at pp. 1, 3−4)

DOE recognizes that portable ACs, room ACs, and central ACs all provide cooling; however, there are significant differences in how these products are installed, used, and provide cooling. Central ACs are fixed appliances, installed year-round, built into homes, and controlled by a central thermostat to maintain a relatively constant temperature throughout the conditioned space. In contrast, room ACs and portable ACs are installed, often seasonally, in a single room; operate based on an internal thermostat when turned on, typically only during the cooling season; and may be readily turned off when the room is not occupied. Furthermore, room ACs and portable ACs differ from each other in that they have different installation means, and induce different amounts of outdoor air infiltration heat and other unwanted heat transfer to the conditioned space (*i.e.,* portable ACs are located entirely within the conditioned space along with the hot exhaust duct, and the window mounting bracket typically has little to no insulation; in contrast to room ACs, which often ship with insulated side-curtains or other insulating installation materials). Regarding capacity and efficiency comparisons, based on recent standards rulemaking analyses and market research, DOE expects that portable AC capacity ranges from 2,500 to 10,000 Btu/h and CEER ranges from 4 to 8 Btu/Wh, both of which are significantly lower than the current typical range of capacity and CEER for room ACs, ranging from 5,000 to 35,000 Btu/h and 9 to 15 Btu/Wh, respectively.

The test procedures for room ACs, portable ACs, and central ACs were developed based on the best available usage data and information regarding representative conditions at that time. In considering amendments to the DOE test procedure for portable ACs, DOE welcomes feedback and data regarding the representative operating conditions, setpoints, and annual operating hours and installation time for portable ACs.

Issue 4: DOE requests further information and usage data regarding setpoints, operating conditions, seasonal use, and installation time for portable ACs.

3. Energy Use Measurements

The current DOE test procedure for portable ACs provides a measure of power consumption and energy use under various operating modes (cooling mode, off-cycle mode, standby mode, inactive mode, and off mode) and duct configurations (single-duct and dual-duct). In the November 2020 RFI, DOE sought comment on whether existing test procedure requirements (*e.g.*, instrumentation, testing configurations/specifications, calculation methodologies) accurately measure energy use without adding undue burden to the test procedure. 85 FR 70508, 70510.

DOE received no comments on this topic in response to the November 2020 RFI. Throughout this RFI, DOE seeks further comment on specific topics relevant to instrumentation, testing configurations and specifications, and calculation methodologies that may improve the existing test to more accurately measure energy use without adding undue burden to the test procedure.

4. Representative Average Period of Use

a. Operational Modes

The current DOE test procedure for portable ACs measures energy use during a representative average period of use. The measured energy performance includes energy use associated with cooling mode and off-cycle mode during the cooling season, and inactive mode and off mode energy use for the entire year.

In cooling mode, a portable AC activates the main cooling function in response to a signal from the thermostat or temperature sensor, which includes activating the refrigeration system or activating the fan or blower without the use of the refrigeration system. Section 2.4 of appendix CC.

In off-cycle mode, a portable AC: (1) has cycled off its main cooling or heating function via thermostat or temperature sensor signal; (2) may or may not operate its blower or fan; and (3) will reactivate the main function according to the thermostat or temperature sensor signal. Section 2.7 of appendix CC.

Inactive mode is a standby mode that facilitates the activation of an active mode or off-cycle mode via remote switch (including remote control), internal sensor, or timer, or that provides continuous status display. Section 2.6 of appendix CC.

In off mode, the portable AC is connected to a mains power source and is not providing any active, off-cycle, or standby mode function, and where the mode may persist for an indefinite time. An indicator that only shows the user that the portable AC is in the off position is included within the classification of an off mode. *See* Section 2.8 of appendix CC.

Issue 5: DOE seeks comment regarding whether any of the currently considered modes in the DOE test procedure should no longer be addressed, or whether any representative modes that are not currently considered should be addressed in future test procedure amendments.

Issue 6: DOE seeks comment regarding whether the performance and energy use for the operational modes discussed above are appropriately addressed and captured in the DOE test procedure.

b. Hours of Operation

To determine the energy use during a representative period of use, the test procedure assigns the following hours of operation for each mode: 750 hours for cooling mode, 880 hours for off-cycle mode, and 1,355 hours for inactive or off mode. Section 5.3 of appendix CC. In the absence of sufficient consumer usage data specific to portable ACs, DOE established these operating hours in the June 2016 Final Rule, derived from the most relevant data available representative of overall consumer use, which at that time were for room ACs. DOE adjusted the room AC usage data to reflect portable ACs usage; for example, inactive mode and off mode estimates outside of the cooling season were adjusted, given that portable ACs are more likely to be unplugged outside of the cooling season as compared to room ACs that are less portable.[6] 81 FR 35241, 35258−35259.

In response to the November 2020 RFI, AHAM reiterated its prior opposition to reliance on room AC data during the previous test procedure rulemaking to determine annual operating hours for portable ACs, suggesting that while portable ACs and room ACs may be similar in some ways, usage of the products differs. AHAM recommended that DOE refrain from using room AC data to support rulemaking activity for portable ACs in the future, unless there is evidence that the room AC data are a sufficient

[6] Further information regarding the development of the operating hours is provided in the February 25, 2015 notice of proposed rulemaking and November 27, 2015 supplemental notice of proposed rulemaking, available at *https://www.regulations.gov/docket/EERE-2014-BT-TP-0014-0009* and https://www.regulations.gov/docket/EERE-2014-BT-TP-0014-0021, respectively.

surrogate for portable AC operating hours. (AHAM, No. 2 at p. 2) It is generally DOE's practice to rely on the most relevant and current data available at the time of the analysis to identify appropriate operating hours. At this time, DOE is unaware of any portable AC usage data sufficient to characterize representative consumer usage, and notes that no such data or data sources have been provided by commenters to date.

Issue 7: DOE requests data regarding annual operating hours for all representative modes of operation for portable ACs.

c. Configurations

In addition to addressing different operating modes, the portable AC test procedure in appendix CC addresses two configurations of portable ACs: dual-duct and single-duct. As described, dual-duct portable ACs draw some or all of their condenser inlet air from outside the conditioned space through a duct attached to an adjustable window bracket (and may draw additional condenser inlet air from the conditioned space) and discharge the condenser outlet air outside the conditioned space by means of a separate duct attached to an adjustable window bracket. 10 CFR 430.2. Dual-duct units use two parallel airflow paths. With the first airflow path, air from the conditioned space (*i.e.*, indoors) is drawn into the unit, passes over a cold heat exchanger (*i.e.*, the evaporator), and is discharged back into the room. With the second airflow path, air from outdoors (possibly with additional air from indoors) is drawn into the unit, passes over a hot heat exchanger (*i.e.*, the condenser), and is discharged back outdoors. In this type of system, the heat that is removed from the indoor airflow path is essentially transferred to the outdoor airflow path and discharged outdoors. The temperature of the air flowing across the condenser significantly affects a portable AC's cooling capacity. Because the

air passing across the condenser is drawn from outdoors, and outdoor air temperatures vary during portable AC use, the cooling capacity of a dual-duct unit is significantly affected by changes in outdoor air temperatures. Given the impact of outdoor air temperature on overall cooling performance and efficiency, Appendix CC requires dual-duct units to be tested at two different "test conditions" in the test chamber that supplies the condenser inlet air, representing two different outdoor temperatures: 95 °F and 83 °F. *See* Section 4.1 of appendix CC. Under both test conditions, the test chamber in which the unit is installed is maintained at a temperature of 80 °F and the unit is operated at full load. *Id.*

Single-duct portable ACs draw all of their condenser inlet air from the conditioned space without the means of a duct, and discharge the condenser outlet air outside the conditioned space through a single duct attached to an adjustable window bracket. 10 CFR 430.2. Single-duct units also use two parallel airflow paths; however, in contrast to dual-duct units, the condenser airflow path draws air only from inside the conditioned space rather than from outside. This air is drawn into the unit through air grates in the unit's chassis, passes over the condenser, and is discharged to the outdoors through the single duct. Because the inlet air is drawn from indoors (as opposed to outdoors, as with dual-duct units), and because the indoor air temperature remains steady during operation, a single test condition is specified for single-duct portable ACs. Appendix CC specifies a temperature of 80 °F in the test chamber in which the unit is installed (corresponding to the specified indoor air temperature). Section 4.1 of appendix CC. As with the dual-duct unit tests, the single-duct unit is operated at full load throughout the duration of the test.

Appendix CC currently requires that portable ACs able to operate as both a single-duct and dual-duct portable AC, as distributed in commerce by the manufacturer, must be tested and rated for both duct configurations. Section 3.1.1 of appendix CC.

In response to the November 2020 RFI, NEEA recommended that DOE maintain the requirement that a portable AC able to operate in both duct configurations as distributed in commerce be tested and rated in both configurations. According to NEEA, the single-duct configuration typically results in infiltration air because condenser air is pulled from the room and rejected outside, resulting in a net airflow out of the space, which increases energy use and reduces capacity. NEEA recommended that if products can be operated in a single-duct configuration, they should continue to be tested in that configuration. (NEEA, No. 5 at pp. 3–4)

Issue 8: DOE requests feedback regarding single-duct and dual-duct portable AC test requirements and any other relevant considerations to ensure that the test procedures produce representative results for both configurations, including products that operate in both configurations, as distributed in commerce by the manufacturer.

5. Test Burden

In the November 2020 RFI, DOE sought comment on whether any modifications to the DOE test procedure could reduce the test burden and costs while still allowing for accurate determinations of energy use during a representative average use cycle. 85 FR 70508, 70510–70511.

AHAM stated its concern that changing the test procedure in any significant way would increase burden, as technicians would need to be retrained and retesting could be necessary. AHAM stated that any further modifications would unnecessarily complicate what it described as an already complex test procedure. (AHAM, No. 2 at p. 2)

Issue 9: DOE requests further comment on potential for adjustments to the DOE test procedure that may improve repeatability, reproducibility, or representativeness, and how such adjustments would impact test burden.

Issue 10: DOE requests comment on whether any aspects of the DOE test procedure could be adjusted to reduce test burden while not impacting the repeatability, reproducibility, or representativeness of the test procedure.

6. Infiltration Air, Duct Heat Transfer, and Case Heat Transfer

The portable AC test procedure accounts for the effects of heat transfer from two sources: (1) infiltration of outdoor air into the conditioned space (*i.e.*, "infiltration air") and (2) heat leakage through the duct surface to the conditioned space (*i.e.,* "duct heat transfer"). Heat transfer from infiltration air is calculated using the nominal test chamber and the condenser inlet air (outdoor) rating conditions specified for Test Configuration 3, Conditions A and B (the test configuration for dual-duct units). *See* Sections 4.1 and 4.1.2 of appendix CC. Duct heat transfer is accounted for from the duct surface to the conditioned space; duct heat transfer for each duct is determined from the average duct surface temperature as measured by four equally-spaced thermocouples adhered to the side along the length of the condenser exhaust duct for single-duct units, and the condenser inlet and exhaust ducts for dual-duct units. Section 4.1.1 of appendix CC. In the June 2016 Final Rule, DOE considered the effects of heat transfer through the outer chassis of the portable AC to the conditions space (*i.e.,* "case heat transfer"), but determined to not include provisions accounting for case heat transfer in the portable AC

test procedure, on the basis that case heat transfer has a minimal impact on cooling capacity and that including measurement of it would substantively increase the test burden. 81 FR 35241, 35254–35255.

NEEA recommended that DOE continue to incorporate the energy impacts of infiltration air and duct heat transfer in the portable AC test procedure, stating that both can have significant effects on capacity and efficiency and therefore are currently appropriately accounted for in the test procedure. (NEEA, No. 5 at pp. 2–3)

Duct heat transfer is calculated using a convection heat transfer coefficient along with duct surface temperature measurements and the calculated duct surface area. *See* Section 4.1.1 of appendix CC. In the June 2016 Final Rule, DOE reviewed previously presented test data[7] and concluded that the most representative value of the convection heat transfer coefficient is 3 British thermal units per hour per square foot per degree Fahrenheit ("Btu/h-ft^2-°F"). 81 FR 35241, 35253–35254. DOE is interested in any further available data regarding portable AC duct convection heat transfer coefficients that may supplement the previously considered data set.

Issue 11: DOE requests any available information or data on portable AC infiltration air, duct heat transfer, or case heat transfer that may improve the representativeness, repeatability, or reproducibility of the test procedure.

Issue 12: DOE requests input on any industry test procedures that measure case heat transfer, estimates of test burden required to measure it, and data quantifying its impact on cooling capacity and efficiency.

[7] DOE reviewed test data from four single-duct and two dual-duct portable ACs with duct convection coefficients ranging from 1.70 to 5.26 Btu/h-ft^2-°F, as originally presented in a supplemental notice of proposed rulemaking published November 27, 2015. 80 FR 74020.

Issue 13: DOE requests input on any less burdensome approaches to address case heat transfer than previously considered in the June 2016 Final Rule.

Issue 14: DOE requests feedback on the impacts of case material and case design on case heat transfer, and whether certain materials or designs soon to be implemented in units on the market would result in significantly different case heat transfer than current designs.

Issue 15: DOE requests data and feedback on any additional available data regarding a duct convection heat transfer coefficient, and whether the current convection heat transfer coefficient of 3 Btu/h-ft^2-°F remains representative for portable ACs in their typical installation and use environments.

7. Heating Mode

Heating mode is an active mode in which a portable AC has activated the main heating function in response to the thermostat or temperature sensor signal, including activating a resistance heater, the refrigeration system with a reverse refrigerant flow valve, or the fan or blower without activation of the resistance heater or refrigeration system. In the June 2016 Final Rule, DOE determined not to establish a heating mode efficiency metric. DOE noted that although some portable ACs offer an "auto mode" that allows for both cooling and heating mode operation depending upon the ambient temperature, available data suggest that portable ACs are not used for heating purposes for a substantial amount of time. 81 FR 35241, 35257.

Issue 16: DOE seeks usage data on portable AC heating mode and whether it accounts for a significant portion of portable AC annual energy use.

8. Network Connectivity

Network connectivity implemented in portable ACs can enable functions such as providing real-time room temperature conditions or receiving commands via a remote user interface such as a smartphone. DOE has observed that network connectivity typically operates continuously in the background while the portable AC performs other functions. In response to the November 2020 RFI, the Joint Commenters stated that portable ACs with connected functionality are now widely available and encouraged DOE to incorporate a measurement of the standby power when a portable AC with network functions is connected to a network. (Joint Commenters, No. 4 at p. 2) DOE recognizes that portable ACs with network functions are now readily available on the market in the United States, and welcomes further feedback on the relative impact of such functionality on overall energy consumption and performance.

Issue 17: DOE requests further comment and data on the prevalence of network connectivity in portable ACs available on the market currently or in the near future.

Issue 18: DOE requests available data quantifying the power consumption and usage time associated with network functionality in portable ACs.

Issue 19: DOE requests information regarding the capabilities and attributes enabled by network connectivity (*e.g.,* energy savings, demand response, convenience features).

9. Air Circulation Mode

DOE considers air circulation mode as a consumer initiated active mode in which a portable AC has activated only the blower or fan and the compressor is off. In the June 2016 Final Rule, DOE determined it would not measure or allocate annual operating

hours to air circulation mode due to lack of usage information for this consumer-initiated air circulation feature. 81 FR 35241, 35257. In response to the November 2020 RFI, NEEA and the California IOUs recommended that DOE incorporate into a revised test procedure the energy use in what they described as "fan-only mode," in which the fan is operating but the compressor is not. They referenced a portable AC field metering study conducted by Lawrence Berkeley National Laboratory ("LBNL") in 2014[8] which found that 39 percent of active mode time was spent in fan-only mode, with the remaining active mode time spent in cooling mode, during which both the compressor and fan are operating. NEEA and the California IOUs stated that this was consistent across residential and commercial applications. (NEEA, No. 5 at pp. 3–4; California IOUs, No. 3 at pp. 4–6) The California IOUs further stated that average power use for different units in fan-only mode ranged from 5 to 20 percent of the average power use in cooling mode. (California IOUs, No. 3 at pp. 4-6) Considering that, as reported, fan-only mode represents 39 percent of the portable AC operating time, and considering the variability in fan-only mode power consumption demonstrated in this study, NEEA and the California IOUs encouraged DOE to explore including fan-only mode energy use in the portable AC test procedure. (NEEA, No. 5 at pp. 3–4; California IOUs, No. 3 at pp. 4–6)

Based on the descriptions of "fan-only mode" in the comments, and a review of the field metering study referenced, DOE expects that the annual usage hours and energy consumption of fan operation referenced in comments could include operation in both off-cycle mode, which is currently addressed in appendix CC, and the user-initiated air circulation mode. DOE seeks further clarification and distinction from commenters

[8] "Using Field-Metered Data to Quantify Annual Energy Use of Portable Air Conditioners," T. Burke *et al*., Environmental Energy Technologies Division, LBNL, December 2014.

regarding operating hours and energy consumption for the user-initiated air-circulation mode, which is not currently addressed in appendix CC.

Issue 20: DOE seeks additional information and data on the consumer-initiated air circulation mode and other consumer-initiated modes during which the fan operates without the compressor (*e.g.,* the characteristics of those operational mode(s), annual operation, prevalence in models as a consumer mode, effectiveness, *etc*.).

10. Part-Load Performance

a. Cycling Losses

Historically, portable ACs have been designed using a single-speed compressor, which operates at full cooling capacity while the compressor is on. To match the cooling load of the space, which in most cases is less than the full cooling power of the compressor, a single-speed compressor cycles on and off. This cycling behavior introduces inefficiencies due to the surge in power draw at the beginning of each "on" cycle, before the compressor reaches steady-state performance. These inefficiencies are referred to as cycling losses and are apparent only in single-speed portable ACs, not variable-speed ACs as variable-speed compressors run continuously, adjusting their speeds as required.

The California IOUs asserted that testing single-speed portable ACs without accounting for cycling losses is not representative of an average-use cycle, particularly when comparing to variable-speed units. The California IOUs stated that there is an increasing prevalence of variable-speed equipment in the marketplace, and recommended that DOE revise the test procedure to allow accurate comparison of performance for

single-speed and variable-speed portable ACs by accounting for single-speed portable AC compressor cycling at part-load conditions. The California IOUs further stated that such a revision would also address the same issue underlying recent portable AC waivers (as discussed in section II.C of this RFI). The California IOUs noted that DOE's test procedure for central ACs accounts for single-speed efficiency losses at part-load conditions and further cited a 2014 report conducted by Burke *et al*.[9] in which operating times for cooling mode (compressor on), fan-only mode, and off/standby mode were monitored. The California IOUs specifically highlighted the prevalence of single-speed compressor cycling in this report. (California IOUs, No. 3 at pp. 2−3)

Cycling losses associated with single-speed compressors are not accounted for in the current test procedure. DOE recognizes that such losses are not present for variable-speed portable ACs. In a Decision and Order granting a waiver to LG Electronics USA, Inc. ("LG") on June 2, 2020, DOE addressed the cycling of a single-speed compressor as part of a "performance adjustment factor" required for LG's variable-speed portable ACs. 85 FR 33643 (Case No. 2018-004, "LG Waiver"). As established in the LG Waiver, the performance adjustment factor represents the average performance improvement of the variable-speed model relative to a theoretical comparable single-duct single-speed model, resulting from the variable-speed unit avoiding cycling losses associated with the lower temperature test condition. 85 FR 33643, 33646. In a notice of interim waiver granted to GD Midea Air Conditioning Equipment Co. LTD. ("Midea") on April 6, 2021, DOE similarly requires use of a performance adjustment factor for the specified Midea combined-duct dual-duct variable-speed portable ACs. 86 FR 17803 (Case No. 2020-006, "Midea Waiver").

[9] "Using Field-Metered Data to Quantify Annual Energy Use of Portable Air Conditioners," T. Burke *et al*., Environmental Energy Technologies Division, LBNL, December 2014.

Issue 21: DOE requests further information and data on efficiency losses associated with single-speed compressor cycling at part-load conditions.

Issue 22: DOE requests comment on the incorporation of the current waiver approach to determine variable-speed portable AC efficiency, based on the performance improvement relative to a single-speed portable AC resulting from elimination of cycling losses.

b. Load-Based Testing

The current test procedure prescribed by ANSI/AHAM PAC–1–2015 measures cooling capacity and EER based on an air enthalpy approach that measures the air flow rate, dry-bulb temperature, and water vapor content of air at the inlet and outlet of the portable AC when it is installed in a test chamber at specified indoor ambient conditions and the ducts are connected to a second chamber at specified outdoor ambient conditions. A load-based test either fixes or varies the amount of heat added to the indoor test room by the reconditioning equipment, while the indoor test room temperature is permitted to change and is controlled by the test unit according to its thermostat setting.

The California IOUs, Joint Commenters, and NEEA recommended that DOE shift to a load-based test to account for part-load portable AC performance. (California IOUs, No. 3 at p. 2; Joint Commenters, No. 4 at p. 1; NEEA, No. 5 at p. 2) The Joint Commenters stated that, while the test procedure waiver granted to LG provides a method for crediting the potential energy savings associated with variable-speed compressors, it does not reflect how variable-speed units actually operate in the field. California IOUs, the Joint Commenters, and NEEA stated that a load-based test would capture not only the benefits of variable-speed compressors, but also other important factors that affect efficiency performance, including cycling losses and control strategies for both single-

speed and variable-speed units. (California IOUs, No. 3 at p. 2; Joint Commenters, No. 4 at p. 1; NEEA, No. 5 at p. 2) According to NEEA, a load-based test would fully account for the effectiveness of controls, cycling effects, and variable-speed performance of both portable ACs and room ACs, which would better reflect real world performance. NEEA recommended that DOE adopt load-based test procedure for both portable ACs and room ACs. (NEEA, No. 5 at p. 2)

The California IOUs stated that should DOE switch to a load-based test with multiple test conditions and a combined seasonal metric, reporting of full-load capacity and power consumption should still be required. According to the California IOUs, knowing power consumption and efficiency at full load is essential to both consumers and utilities in hot-dry climates. The California IOUs further asserted that due to the prevalence of peak-load pricing, full-load performance is often a better indication of consumer annual energy cost than a part-load metric. (California IOUs, No. 3 at p. 4)

DOE recognizes the challenges associated with implementing load-based testing in the portable AC test procedure. As discussed in the recent final rule for room AC test procedures, DOE expects that a load-based test would reduce repeatability and reproducibility due to limitations in current test chamber capabilities, namely the lack of specificity in industry standards regarding chamber dimensions and reconditioning equipment characteristics, which would negatively impact the representativeness of the results and potentially be unduly burdensome. 86 FR 16446, 16466 (March 29, 2021). DOE continues to seek comment and information on the feasibility and applicability of load-based testing for portable ACs.

Issue 23: DOE requests further comment and data on industry standards for portable ACs or other products that use load-based tests.

Issue 24: DOE requests comment on commercial laboratory capabilities regarding potential portable AC load-based testing.

Issue 25: DOE requests comment regarding the repeatability and reproducibility of any load-based testing for portable ACs.

11. Dehumidification Mode

NEEA stated that based on its review of a major retailer's website most portable ACs provide a dehumidification feature. Given the predominance of this feature, NEEA recommended that DOE further investigate its usage and consider including dehumidification mode in an updated test procedure. (NEEA, No. 5 at pp. 3−4)

Issue 26: DOE seeks usage data on dehumidification features available on portable ACs, including prevalence in units on the market, annual operating hours, and energy consumption associated with this mode.

12. Spot Coolers

NEEA commented that "spot coolers" are not currently covered by the portable AC test procedure. NEEA stated that these products do not provide net cooling, but rather move heat from one area to another in a space (*i.e.*, they reject condenser air to the cooled space). NEEA stated that some portable AC products may meet this description of a spot cooler, and recommended that DOE continue to monitor the market to ensure that market characterization of a product as a "spot cooler" is not utilized as a means to circumvent portable AC standards. (NEEA, No. 5 at pp. 3–4)

Issue 27: DOE seeks information regarding the availability of any portable ACs that provide cooling in a similar manner to single-duct and dual-duct portable ACs but do not meet either of the definitions for a single-duct or dual-duct portable AC at 10 CFR 430.2.

C. Test Procedure Waivers

Any interested person may seek a waiver from the test procedure requirements for a particular basic model of a type of covered product when the basic model for which the petition for waiver is submitted contains one or more design characteristics that: (1) prevent testing according to the prescribed test procedure, or (2) cause the prescribed test procedures to evaluate the basic model in a manner so unrepresentative of its true energy consumption characteristics as to provide materially inaccurate comparative data. 10 CFR 430.27(a)(1).

DOE has granted one test procedure waiver and one test procedure interim waiver for the current portable AC test procedure. As discussed, DOE granted LG a test procedure waiver from specified portions of the DOE test procedure for determining the energy efficiency of listed portable AC basic models, under which LG is required to test and rate the listed basic models of its portable ACs in accordance with the alternate test procedure specified in the Decision and Order.[10] 85 FR 33643, 33647 (June 2, 2020). LG asserted that the current DOE test procedure for single-duct portable ACs does not take into account the specific performance and efficiency benefits associated with the specified basic models, which are single-duct variable-speed portable ACs under part-load conditions. *Id.* In granting the LG Waiver, DOE determined that the alternate test procedure in the Decision and Order produces efficiency results for variable-speed

[10] See Case No. 2018-004.

portable ACs which are comparable with the results for single-speed units. *Id.* The alternate test procedure accomplishes this by adjusting the efficiency rating of the variable-speed portable AC by the amount the variable-speed unit would outperform a theoretical comparable single-speed unit in a representative period of use. *Id*.

On July 16, 2020, DOE received a petition for waiver and application for interim waiver from Midea, consistent with the approach used for variable-speed compressors in the waiver granted to LG, with modifications to account for dual-duct units incorporating Midea's combined-duct technology.[11] Midea stated the current test procedure prevents the testing of its combined-duct technology because the condenser inlet and outlet air streams are incorporated into the same structure. (Midea Petition, EERE-2020-BT-WAV-0023 No. 2 at pp. 4–5) Midea further stated that, since the airflow both into and out of the condenser must be measured simultaneously, modifications are needed to adapt Midea's combined-duct technology to DOE's test procedure and standard airflow measurement apparatuses. (Midea Petition, EERE-2020-BT-WAV-0023 No. 2 at p. 5) Midea stated the DOE test procedure does not take into account a specially designed adapter that is needed for measuring the airflows. (*Id.*) DOE granted Midea an interim waiver on April 6, 2021, under which Midea is required to test and rate the listed basic models of its portable ACs in accordance with the alternate test procedure specified in the interim waiver. This alternate test procedure adjusts the efficiency rating of Midea's variable-speed portable ACs in a manner similar to that of the alternate test procedure in the LG Waiver, with provisions to allow testing of the combined-duct technology. 86 FR 17803.

[11] The Midea Petition for Waiver from Portable Air Conditioners Test Procedures (EERE-2020-BT-WAV-0023) is available at *https://www.regulations.gov/docket/EERE-2020-BT-WAV-0023*.

In response to the November 2020 RFI, AHAM stated that updates to the test procedure are necessary to address new technologies that cannot be adequately tested under the existing test procedure and have been addressed through waivers. AHAM stated that any changes should be limited to incorporating existing waivers into the test procedure. (AHAM, No. 2 at p. 2) The California IOUs noted that DOE has granted a waiver to this test procedure and that there is an outstanding waiver request open. The California IOUs encouraged DOE to move forward with a rulemaking to eliminate the need for continuation of the waiver. (California IOUs, No. 3 at p. 1)

The California IOUs stated that fixed-speed testing of variable-speed equipment may not be representative of field performance when the speed of the compressor during the test is not determined solely by the onboard controls. The California IOUs encouraged DOE to review its comments on the room AC test procedure notice of proposed rulemaking ("NOPR")[12] and consider provisions to ensure that the measured performance for variable-speed portable ACs is representative of the performance expected with built-in controls. (California IOUs, No. 3 at p. 4)

Issue 28: DOE requests market data on the prevalence of variable-speed portable ACs on the market now and in the future, and seeks comment on any recommended amendments to improve the alternate test procedure granted to LG.

Issue 29: DOE requests comment on how the use of fixed speeds during testing represents expected field performance under built-in controls.

Issue 30: DOE requests information on new technologies and designs (*e.g.,* combined-duct configurations) to inform the test procedure development.

[12] Documents related to the room AC test procedure rulemaking are available at *https://www.regulations.gov/docket/EERE-2017-BT-TP-0012*

III. Submission of Comments

DOE invites all interested parties to submit in writing by the date specified under the **DATES** heading, comments and information on matters addressed in this RFI and on other matters relevant to DOE's consideration of amended test procedures for portable ACs. These comments and information will aid in the development of a test procedure NOPR for portable ACs if DOE determines that amended test procedures may be appropriate for these products.

Submitting comments via http://www.regulations.gov. The *http://www.regulations.gov* web page will require you to provide your name and contact information. Your contact information will be viewable to DOE Building Technologies staff only. Your contact information will not be publicly viewable except for your first and last names, organization name (if any), and submitter representative name (if any). If your comment is not processed properly because of technical difficulties, DOE will use this information to contact you. If DOE cannot read your comment due to technical difficulties and cannot contact you for clarification, DOE may not be able to consider your comment.

However, your contact information will be publicly viewable if you include it in the comment or in any documents attached to your comment. Any information that you do not want to be publicly viewable should not be included in your comment, nor in any document attached to your comment. Following this instruction, persons viewing comments will see only first and last names, organization names, correspondence containing comments, and any documents submitted with the comments.

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DOE processes submissions made through *http://www.regulations.gov* before posting. Normally, comments will be posted within a few days of being submitted. However, if large volumes of comments are being processed simultaneously, your comment may not be viewable for up to several weeks. Please keep the comment tracking number that *http://www.regulations.gov* provides after you have successfully uploaded your comment.

Submitting comments via e-mail. Comments and documents submitted via e-mail also will be posted to *http://www.regulations.gov*. If you do not want your personal contact information to be publicly viewable, do not include it in your comment or any accompanying documents. Instead, provide your contact information on a cover letter. Include your first and last names, e-mail address, telephone number, and optional mailing address. The cover letter will not be publicly viewable as long as it does not include any comments.

Include contact information each time you submit comments, data, documents, and other information to DOE. Faxes will not be accepted.

Comments, data, and other information submitted to DOE electronically should be provided in PDF (preferred), Microsoft Word or Excel, WordPerfect, or text (ASCII)

file format. Provide documents that are not secured, written in English and free of any defects or viruses. Documents should not contain special characters or any form of encryption and, if possible, they should carry the electronic signature of the author.

Campaign form letters. Please submit campaign form letters by the originating organization in batches of between 50 to 500 form letters per PDF or as one form letter with a list of supporters' names compiled into one or more PDFs. This reduces comment processing and posting time.

Confidential Business Information. According to 10 CFR 1004.11, any person submitting information that he or she believes to be confidential and exempt by law from public disclosure should submit via e-mail to PortableAC2020TP0029@ee.doe.gov with two well-marked copies: one copy of the document marked confidential including all the information believed to be confidential, and one copy of the document marked "non-confidential" with the information believed to be confidential deleted. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

It is DOE's policy that all comments may be included in the public docket, without change and as received, including any personal information provided in the comments (except information deemed to be exempt from public disclosure).

DOE considers public participation to be a very important part of the process for developing test procedures and energy conservation standards. DOE actively encourages the participation and interaction of the public during the comment period in each stage of this process. Interactions with and between members of the public provide a balanced discussion of the issues and assist DOE in the process. Anyone who wishes to be added

to the DOE mailing list to receive future notices and information about this process should contact Appliance and Equipment Standards Program staff at (202) 287-1445 or via e-mail at *ApplianceStandardsQuestions@ee.doe.gov*.

Signing Authority

This document of the Department of Energy was signed on April 9, 2021, by Kelly Speakes-Backman, Principal Deputy Assistant Secretary and Acting Assistant Secretary for Energy Efficiency and Renewable Energy, pursuant to delegated authority from the Secretary of Energy. That document with the original signature and date is maintained by DOE. For administrative purposes only, and in compliance with requirements of the Office of the Federal Register, the undersigned DOE Federal Register Liaison Officer has been authorized to sign and submit the document in electronic format for publication, as an official document of the Department of Energy. This administrative process in no way alters the legal effect of this document upon publication in the *Federal Register*.

Signed in Washington, D.C., on April 13, 2021

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Treena V. Garrett
Federal Register Liaison Officer,
U.S. Department of Energy

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